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NPIC/TSSG/RED-1904-69

3 November 1969

MEMORANDUM FOR THE RECORD

SUBJECT: Status of the [] Line Scan and Ground Order-of-Battle

1. The management of the subject contracts reverted to [] HFS/ATB/RED, effective 15 September 1969.

2. Status of the Line Scan Contract:

a. The planning, "model" data collection, and analysis phases are complete. Though not indicated directly in the contract inspection reports, these phases were not without mishap. During a May visit to [] agreed to furnish, in writing, the details of his experimental procedure, logistical support requirements, schedule, and a bimonthly financial statement. Though this information was requested in April, May and June, July and August again, it still has not been received. Since verbal contact was maintained, no major complications developed; however, the lack of specific requirements caused some administrative difficulty. When [] arrived at NPIC on 7 July to execute the subjective tests (P.I.'s viewing GEMS of models), immediate scheduling, equipment and space problems arose. Had we known these requirements in advance the entire effort would have appeared less disorganized. As an aside, it was noted that the attitude of the P.I.'s was generally not good. They were participating in other experiments and this unexpected addition was not welcome. It remains to be seen if this is reflected in the results.

b. Similarly, the purchase order to [] for the GEM's, did not contain any specifications. As a result the arrangement of the model vehicles in one set was incorrect. This was not caught until one group of P.I.'s had been tested thus nullifying part of their data and requiring a change in experimental design to a less desirable form. The "ground resolution" values of the GEM's produced were not determined directly by [] (they were not specifically tasked to do this). Assignment of actual dimensions was estimated by assuming the best GEM contained detail at the smallest desired value that the other GEMS were proportionally degraded. The evidence for assuming the proportionality existed was furnished by [] in the form of MTF's and the resolution target observations of two individuals. The resolution values varied with target contrast, neither target having a contrast equal to the model images. Consequently, more interpolation was required. []

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had the resolution targets read by members of their staff to check [] results. The values did not correlate well. It is at this point that the technique used to degrade the GEM's (defocusing) may have affected the readings. The defocused bar targets contained spurious resolution and made reading more subjective than normal. It should be noted that

[] had discussed the GEM specifications desired with [] technical personnel--but for some reason the purchase order submitted by [] did not reflect this. The best GEM making technique (avoiding defocusing) was not used in this case to minimize costs. Even so, the GEM's cost [] had expected. The MTF's furnished by [] were incomplete. In summary, the problems with the GEM's reduce the value of the experiment somewhat--just how much should be indicated in the [] final report due in October-November 1969.

c. The images in the line-scan experiment were of ground order of battle targets. Thus some of the data for the GOB contract was actually collected during the line-scan experiments. More will be said about this later.

d. As of 26 August 1969, the experimental data analysis was in the final phases, [] had been expended, yet the contract was not due to expire until April 1970. These facts created problems that will be discussed in connection with the GOB contract.

3. Status of the GOB Contract:

a. The contract was initiated at the suggestion of [] as the result of conversations w []. The proposal was written hurriedly by [] during a visit to NPIC. Phase Ia was nothing more than the work performed under the line scan contract described above, since the latter included GOB targets and had the same purpose, i.e., get a ballpark estimate of the situation. Therefore, the experiments were not performed twice and no funds have been charged against the GOB contract for execution of phase Ia. Phase Ib (field data collection) was completed, mainly by NPIC and []. Only the GEM's remain to be made. The cost of the GEM's will approach [] thus using most of the [] in the GOB contract. Phase II (presumably the testing and data analysis portion) was not funded under the existing GOB contract. [] was allowed for this in the FY-70 budget, but no proposal has yet been received. The GOB contract (Phase I), will expire in December 1969.

b. During the test object preparation (Phase Ib) portion of the GOB contract, [] supervised the photographing of real targets at Aberdeen Proving Ground. The camera was provided by [] at ORD, and NPIC payed [] to rent the [] aircraft. Pro-

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cessing and printing will be done at Bridge-head (in dual-gamma chemistry) on 25-26 September 1969. The GEM's will be made at [] It is suggested that written instructions be furnished []

c. No arrangements have been made regarding subjective testing at NPIC, pending receipt of a detailed proposal from []

d. It is my understanding that the real target imagery collected in phase 1b will be used in further line-scan tests. This was discussed during May 15 talks with [] and again with [] on 5 August 1969. It is rather important that this be done, since the line-scan data collected to date cannot be of great value of itself.

4. In a memo of 9 May 1969, [] requested he be briefed regarding the pay-off's, etc. from the [] work before further contracts were discussed. [] of this and asked him to submit (informally) any idea he had concerning future efforts. No [] response has been received to date.

[]
Chief, Image Technology Section
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